



# John Smith Creek Culvert Removal

## Mendocino County, California

### Highlight: John Smith Creek

John Smith creek is a 2-mile tributary to the Navarro River, which runs to the Pacific Ocean in Mendocino County on the North Coast of California. Historically, the river provided important habitat for coho salmon and steelhead. These anadromous fish returned to the Navarro River from the ocean in large numbers during the winter months, and were a major resource for the Native Americans that lived in the area. For most of the 20<sup>th</sup> century, commercial salmon fishing was a major economic driver throughout the Mendocino area, and its coastal rivers were also famous for their recreational fishing opportunities. These anadromous salmonids helped maintain forest and ecosystem health by bringing nutrients (themselves) from the ocean into watersheds where they spawned and died, which helped enrich the forests and wildlife that fed on their carcasses.

Much of the land on California's North Coast is managed for timber production. These forested areas also tend to be the most important habitats for salmon and steelhead populations. Salmon and steelhead are listed as Endangered and Threatened, respectively, on the Federal Endangered Species list. This presents challenges for the timber industry when attempting to balance resource conservation with economic growth. Mendocino Redwood Company exemplifies the potential compatibility that can be achieved between industry and conservation.

Beginning in the early 1900's a series of roads connecting major highways



and towns in Mendocino County were built to facilitate transportation. Where roads intersected streams, metal pipe culverts were installed to pass the streams under the newly built roads. At the time, no one knew that the structure of these pipe culverts would impair fish passage. As it turned out, many culverts scoured large drops at their outlets and fish were not able to make the heightened jump into them. In addition, water velocities inside these culverts were so fast that even if fish could make the jump, they would fail to swim against the strong current and fall out. These culverts thereby blocked salmonid access to hundreds of miles of spawning and rearing habitat in Northern CA counties, and were a major contributor to population decline in these species. In an effort to recover these important salmon and steelhead populations in the Navarro River, many culverts have been replaced with clear spanning structures such as bridges that do not interfere with channel dynamics and salmon and steelhead passage.

## GOAL

**Restore anadromous fish runs and habitat for salmonid fishes while maintaining an economically important road structure**

## CONTACT

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**National Oceanic and  
Atmospheric Administration**

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John Smith Creek contains some of the best salmonid habitat in the Navarro River Basin. Unfortunately, a culvert and road crossing at the confluence of John Smith Creek and the Navarro River was blocking fish access to John Smith Creek. The culvert was failing and there was an immediate risk of a giant blowout of the whole crossing if it was not repaired, which would introduce hundreds of yards of fine sediment into an already sensitive system. The road above the culvert was a main thoroughfare for Mendocino Redwood Company and could not be abandoned. Mendocino Redwood Company wanted to fix the culvert for maintenance and fish passage reasons, but did not have enough money to implement a solution for both problems.

In 2002, the NOAA Restoration Center partnered with Mendocino Redwood Company, Trout Unlimited, the California Department of Fish and Game, and the California Conservation Corps to fix the fish passage problem. The rusty culvert and hundreds of yards of road fill and the roadway were removed. The channel was reshaped, and an 89-foot clear span bridge was installed at the project site. The clear span bridge allowed natural channel movement and fluvial processes to resume, and opened access to approximately 1.5 miles of high quality spawning and rearing habitat for coho salmon and steelhead.

The winter after construction, salmon and steelhead were observed spawning and rearing upstream of the project site. Both species have returned to the stream by the hundreds every year since the project was completed. Rootwads and logs can now wash under the bridge and move through the system for the

first time in more than 50 years. Vegetation colonized the banks, providing shade and habitat for fish.



Culvert at low flow



Culvert and bridge during removal and construction, respectively



## PROJECT PARTNERS:

- **California Conservation Corps**
- **Mendocino Redwood Company**
- **Trout Unlimited**
- **California Department of Fish and Game**